

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-24 (Canceled)

Claim 25 (New): An energy information system which allows an energy information service provider to measure energy usage by a customer at a location, said system comprising:

a sub-measurement board which receives voltage and current signals representative of energy usage at the location, said sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board is connected to an energy distribution panel located at the location and receives at least three voltage signals and at least nine current signals from said energy distribution panel includes a display for outputting energy usage at the location;

a wide area communications network connected directly to the sub-measurement board which transfers the load profile to the energy information service provider;

a processor located at the energy information service provider which processes the load profile; and

wherein said load profile is accessible for remote viewing by the customer.

Claim 26 (New): The system defined in Claim 25 wherein the wide area communications network is one of a radio frequency transmitter/receiver, a communication line or a satellite network.

Claim 27 (New): The system defined in Claim 25 wherein the sub-measurement board includes a microprocessor which calculates the energy usage of individual circuits of an energy distribution panel at the location.

Claim 28 (New): The system defined in Claim 25 wherein the sub-measurement board is connected to an utility meter and receives an utility usage signal therefrom, said sub-measurement board outputs cumulative utility usage information.

Claim 29 (New): The system defined in Claim 28 wherein the utility meter is one of an electric meter, water meter or gas meter.

Claim 30 (New): A sub-measurement board for calculating load data of individual circuits of an energy distribution panel, said sub-measurement board including:

- a voltage amplifying circuit connected to a voltage terminal of the energy distribution panel for receiving an input voltage signal, said voltage amplifying circuit amplifies the input voltage signal and outputs an amplified voltage signal;

- a current amplifying circuit connected to a current terminal of the energy distribution panel for receiving an input current signal, said current amplifying circuit amplifies the input current signal and outputs an amplified current signal;

- a switching circuit connected to the current amplifying circuit for receiving the amplified current signal, said switching circuit outputs a switched amplified current signal;

- an analog to digital converter connected to the voltage amplifying circuit and the switching circuit for converting the amplified voltage signal into a digital voltage signal and for converting the switched amplified current signal to a digital current signal;

- a memory circuit for storing the digital voltage signal and the digital current signal;

- a microprocessor connected to the memory circuit for receiving the stored digital voltage signal and digital current signal, said microprocessor calculates the load data of individual circuits of the energy distribution panel;

- a first memory circuit connected to the microprocessor, said first memory circuit stores computer instructions which are loaded into the microprocessor and which instruct the microprocessor to compare the digital current signal to the digital voltage signal and determine whether the digital current signal and digital voltage signals are input into the sub-measurement board from a common individual circuit of the energy distribution panel; and

- a display connected to the microprocessor for displaying the calculated load data of the individual circuits of the energy distribution panel.

Claim 31 (New): The sub-measurement board defined in Claim 42 wherein the voltage amplifying circuit is connected to a plurality of voltage terminals of the energy distribution panel for receiving a plurality of input voltage signals, said voltage amplifying circuit amplifies the plurality of input voltage signals and outputs a plurality of amplified voltage signals.

Claim 32 (New): The sub-measurement board defined in Claim 43 wherein the current amplifying circuit is connected to a plurality of current terminals of the energy distribution panel for receiving a plurality of input current signals, said current amplifying circuit amplifies the plurality of input current signals and outputs a plurality of amplified current signals.

Claim 33 (New): The sub-measurement board defined in Claim 30 further including an isolation circuit for isolating the sub-measurement board from external electric and magnetic fields.

Claim 34 (New): A sub-measurement board for calculating load data of individual circuits of an energy distribution panel and transmitting the load data to a communications network, said sub-measurement board including:

- a voltage amplifying circuit connected to a voltage terminal of the energy distribution panel for receiving an input voltage signal, said voltage amplifying circuit amplifies the input voltage signal and outputs an amplified voltage signal;

- a current amplifying circuit connected to a current terminal of the energy distribution panel for receiving an input current signal, said current amplifying circuit amplifies the input current signal and outputs an amplified current signal;

- a switching circuit connected to the current amplifying circuit for receiving the amplified current signal, said switching circuit outputs a switched amplified current signal;

- an analog-to-digital converter connected to the voltage amplifying circuit and the switching circuit for converting the amplified voltage signal into a digital voltage signal and for converting the switched amplified current signal to a digital current signal;

- a memory circuit for storing the digital voltage signal and the digital current signal;

a microprocessor connected to the memory circuit for receiving the stored digital voltage signal and digital current signal, said microprocessor calculates the load data of individual circuits of the energy distribution panel;

a first memory circuit connected to the microprocessor, said first memory circuit stores computer instructions which are loaded into the microprocessor and which instruct the microprocessor to compare the digital current signal to the digital voltage signal and determine whether the digital current signal and digital voltage signals are input into the sub-measurement board from a common individual circuit of the energy distribution panel; and

an output device for outputting the calculated load data of the individual circuits of the energy distribution panel to the communications network.

Claim 35 (New): An energy information system which allows an energy information service provider to measure energy usage by a customer at a location, said system comprising:

a sub-measurement board which receives voltage and current signals representative of energy usage at the location, said sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board is connected to an energy distribution panel located at the location and receives at least three voltage signals and at least nine current signals from said energy distribution panel;

a wide area communications network connected directly to the sub-measurement board which transfers the load profile to the energy information service provider;

a platform located at the energy information service provider which hosts software and databases that enable translation of the load profile from at least one communication protocol into a format that is adapted for processing by the energy information service provider; and

wherein said load profile is accessible for remote viewing by the customer.

Claim 36 (New): The system of claim 35, wherein the at least one communication protocol comprises at least one of a radio frequency signal, a telephone signal, and a satellite signal.

Claim 37 (New): An energy information system which allows an energy information service provider to measure energy usage by a customer at a location, said system comprising:

at least two utility meters, the at least two utilities meters comprising two of an electric meter, a water meter, and a gas meter;

a sub-measurement board which receives voltage and current signals from the at least two utility meters representative of energy usage at the location, said sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board is connected to an energy distribution panel located at the location and receives at least three voltage signals and at least nine current signals from said energy distribution panel;

a wide area communications network connected directly to the sub-measurement board which transfers the load profile to the energy information service provider;

a processor located at the energy information service provider which processes the load profile; and

wherein said load profile indicates a cumulative, periodic consumption of a customer's metered utilities.

Claim 38 (New): A method of monitoring energy usage by a customer at a location, said method comprising the steps of:

receiving metered utility data from at least two utility meters, said metered utility data being representative of energy usage at the location;

processing the metered utility data; and

outputting a cumulative, real-time measurement of usage of a customer's metered utilities.

Claim 39 (New): An energy information system enabling an energy information service provider to measure energy usage by at least one load of at least one customer at a remote location, said system comprising:

at least two utility meters, the at least two utilities meters comprising two of an electric meter, a water meter, and a gas meter measuring the energy usage by the at least one customer;

at least one sub-measurement board which receives input signals from at least one of the at least two utility meters representative of energy usage by the at least one customer, said at least one sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board is connected to an energy distribution panel located at the location and receives at least three voltage signals and at least nine current signals from said energy distribution panel;

at least one distribution panel connected to the at least one load distributing energy to the at least one load for the energy usage;

a wide area communications network responsively connected to the sub-measurement board which transfers the load profile to the energy information service provider;

a gateway platform system including software and databases that enable translation of the load profile from a plurality of signal protocols received via said wide area communications network from said sub-measurement board into a format that is adapted for processing by the energy information service provider; and

a processor system located at the energy information service provider which processes the load profile.

Claim 40 (New): An energy information system enabling an energy information service provider to measure energy usage by at least one customer at a remote location, said system comprising:

at least two utility meters, the at least two utilities meters comprising an electric meter, a water meter, and a gas meter measuring the energy usage by the at least one customer, and outputting input signals from at least one of the at least two utility meters representative of energy usage by the at least one customer, and outputting a load profile of said energy usage;

a wide area communications network responsively connected to said at least two utility meters which transfers the load profile to the energy information service provider;

a gateway platform system including software and databases that enable translation of the load profile from a plurality of signal protocols received via said wide area communications network from said at least two utility meters into a format that is capable of processing by the energy information service provider; and

a processor system located at the energy information service provider which processes the load profile.

Claim 41 (New): An energy information system enabling an energy information service provider to measure energy usage by at least one load of at least one customer at a remote location, said system comprising:

at least two utility meters, the at least two utilities meters comprising two of an electric meter, a water meter, and a gas meter measuring the energy usage by the at least one customer;

at least one sub-measurement board which receives input signals from at least one of the at least two utility meters representative of energy usage by the at least one customer, said at least one sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board is connected to an energy distribution panel located at the location and receives at least three voltage signals and at least nine current signals from said energy distribution panel;

at least one distribution panel connected to the at least one load distributing energy to the at least one load for the energy usage;

a wide area communications network responsively connected to the at least one sub-measurement board which transfers the load profile to the energy information service provider; and

a processor system located at the energy information service provider which processes the load profile.

Claim 42 (New): The system of claim 25, wherein the sub-measurement board is adapted to separately measuring a plurality of loads.

Claim 43 (New): The sub-measurement board of claim 30, wherein the sub-measurement board is adapted to separately measuring a plurality of loads.

Claim 44 (New): The sub-measurement board of claim 34, wherein the sub-measurement board is adapted to separately measuring a plurality of loads.

Claim 45 (New): An energy information system which allows an energy information service provider to measure energy usage by a customer at a location, said system comprising:

a sub-measurement board which receives voltage and current signals representative of energy usage at the location, said sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board further includes means for receiving at least three voltage signals and at least nine current signals from said energy distribution panel;

a wide area communications network connected directly to the sub-measurement board which transfers the load profile to the energy information service provider;

a processor located at the energy information service provider which processes the load profile; and

wherein said load profile is accessible for remote viewing by the customer.

Claim 46 (New): A sub-measurement board for calculating load data of individual circuits of an energy distribution panel, said sub-measurement board including:

a voltage amplifying circuit connected to a voltage terminal of the energy distribution panel for receiving an input voltage signal, said voltage amplifying circuit amplifies the input voltage signal and outputs an amplified voltage signal;

a current amplifying circuit connected to a current terminal of the energy distribution panel for receiving an input current signal, said current amplifying circuit amplifies the input current signal and outputs an amplified current signal;

a switching circuit connected to the current amplifying circuit for receiving the amplified current signal, said switching circuit outputs a switched amplified current signal;

an analog to digital converter connected to the voltage amplifying circuit and the switching circuit for converting the amplified voltage signal into a digital voltage signal and for converting the switched amplified current signal to a digital current signal;

a memory circuit for storing the digital voltage signal and the digital current signal;

a microprocessor connected to the memory circuit for receiving the stored digital voltage signal and digital current signal, said microprocessor calculates the load data of individual circuits of the energy distribution panel;

first memory means for storing computer instructions which are loaded into the microprocessor and which instruct the microprocessor to compare the digital current signal to the digital voltage signal and determine whether the digital current signal and digital voltage signals are input into the sub-measurement board from a common individual circuit of the energy distribution panel; and

a display connected to the microprocessor for displaying the calculated load data of the individual circuits of the energy distribution panel.

Claim 47 (New): A sub-measurement board for calculating loan data of individual circuits of an energy distribution panel and transmitting the load data to a communications network, said sub-measurement board including:

a voltage amplifying circuit connected to a voltage terminal of the energy distribution panel for receiving an input voltage signal, said voltage amplifying circuit amplifies the input voltage signal and outputs an amplified voltage signal;

a current amplifying circuit connected to a current terminal of the energy distribution panel for receiving an input current signal, said current amplifying circuit amplifies the input current signal and outputs an amplified current signal;

a switching circuit connected to the current amplifying circuit for receiving the amplified current signal, said switching circuit outputs a switched amplified current signal;

an analog-to-digital converter connected to the voltage amplifying circuit and the switching circuit for converting the amplified voltage signal into a digital voltage signal and for converting the switched amplified current signal to a digital current signal;

a memory circuit for storing the digital voltage signal and the digital current signal;

a microprocessor connected to the memory circuit for receiving the stored digital voltage signal and digital current signal, said microprocessor calculates the load data of individual circuits of the energy distribution panel;

first memory means for storing computer instructions which are loaded into the microprocessor and which instruct the microprocessor to compare the digital current signal to the digital voltage signal and determine whether the digital current signal and digital voltage signals are input into the sub-measurement board from a common individual circuit of the energy distribution panel; and

an output device for outputting the calculated load data of the individual circuits of the energy distribution panel to the communications network.

Claim 48 (New): An energy information system which allows an energy information service provider to measure energy usage by a customer at a location, said system comprising:

a sub-measurement board which receives voltage and current signals representative of energy usage at the location, said sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board further includes means for receiving at least three voltage signals and at least nine current signals from said energy distribution panel;

a wide area communications network connected directly to the sub-measurement board which transfers the load profile to the energy information service provider;

a platform located at the energy information service provider which hosts software and databases that enable translation of the load profile from at least one communication protocol into a format that is adapted for processing by the energy information service provider; and

wherein said load profile is accessible for remote viewing by the customer.

Claim 49 (New): An energy information system which allows an energy information service provider to measure energy usage by a customer at a location, said system comprising:

at least two utility meters, the at least two utilities meters comprising two of an electric meter, a water meter, and a gas meter;

a sub-measurement board which receives voltage and current signals from the at least two utility meters representative of energy usage at the location, said sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board further includes means for receiving at least three voltage signals and at least nine current signals from said energy distribution panel;

a wide area communications network connected directly to the sub-measurement board which transfers the load profile to the energy information service provider;

a processor located at the energy information service provider which processes the load profile; and

wherein said load profile indicates a cumulative, periodic consumption of a customer's metered utilities.

Claim 50 (New): An energy information system enabling an energy information service provider to measure energy usage by at least one load of at least one customer at a remote location, said system comprising:

at least two utility meters, the at least two utilities meters comprising two of an electric meter, a water meter, and a gas meter measuring the energy usage by the at least one customer;

at least one sub-measurement board which receives input signals from at least one of the at least two utility meters representative of energy usage by the at least one customer, said at least one sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board further includes means for receiving at least three voltage signals and at least nine current signals from said energy distribution panel;

at least one distribution panel connected to the at least one load distributing energy to the at least one load for the energy usage;

a wide area communications network responsively connected to the sub-measurement board which transfers the load profile to the energy information service provider;

a gateway platform system including software and databases that enable translation of the load profile from a plurality of signal protocols received via said wide area communications network from said sub-measurement board into a format that is adapted for processing by the energy information service provider; and

a processor system located at the energy information service provider which processes the load profile.

Claim 51 (New): An energy information system enabling an energy information service provider to measure energy usage by at least one load of at least one customer at a remote location, said system comprising:

at least two utility meters, the at least two utilities meters comprising two of an electric meter, a water meter, and a gas meter measuring the energy usage by the at least one customer;

at least one sub-measurement board which receives input signals from at least one of the at least two utility meters representative of energy usage by the at least one customer, said at least one sub-measurement board outputs a load profile of said energy usage, wherein the sub-measurement board further contains means for receiving at least three voltage signals and at least nine current signals from said energy distribution panel;

at least one distribution panel connected to the at least one load distributing energy to the at least one load for the energy usage;

a wide area communications network responsively connected to the at least one sub-measurement board which transfers the load profile to the energy information service provider; and

a processor system located at the energy information service provider which processes the load profile.